

SEQUENCE LISTING

<110> Attie, Alan D
Stoehr, Jonathan P
Schueler, Kathryn L
Clee, Susanne Michell

<120> Genes associated with type II diabetes

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 Ser Ala Leu Leu Ala Gly Ala Gly Leu Leu Ile Leu Cys Ala Pro Gly
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gtc tgc ggc ggc tcc tgc ccc tcg ccg cac ccc agc tcc gct		146	
Val Cys Gly Gly Ser Cys Cys Pro Ser Pro His Pro Ser Ser Ala			
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cca cgc tcg gcc tcg acc cct agg ggc ttt tcc cac cag ggg cg ^g cca		194	
Pro Arg Ser Ala Ser Thr Pro Arg Gly Phe Ser His Gln Gly Arg Pro			
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ggc agg gct cct gcc acg ccc ctg ccc ctc gta gtg cgt ccc ctg ttc		242	
Gly Arg Ala Pro Ala Thr Pro Leu Pro Leu Val Val Arg Pro Leu Phe			
65	70	75	
tca gtg gcc ccc ggg gac cga gc ^g cta tcc ctg gag cgg gct cg ^g ggc		290	
Ser Val Ala Pro Gly Asp Arg Ala Leu Ser Leu Glu Arg Ala Arg Gly			
80	85	90	
act ggg gca tcc atg gc ^g gtt gct gca cgc tcc ggc cgg agg aga cg ^g		338	
Thr Gly Ala Ser Met Ala Val Ala Ala Arg Ser Gly Arg Arg Arg Arg			
95	100	105	110
agc gga gc ^g gat cag gag aag gca gaa cg ^g gga gag gg ^g gc ^g agt cg ^g		386	
Ser Gly Ala Asp Gln Glu Lys Ala Glu Arg Gly Glu Gly Ala Ser Arg			
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agc ccc cg ^g gga gtg cta aga gat gga ggg cag cag gag cct ggg act		434	
Ser Pro Arg Gly Val Leu Arg Asp Gly Gly Gln Glu Pro Gly Thr			
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cg ^g gag cg ^g gac cc ^g gac aaa g ^g cc acc cgc ttc cg ^g atg gag gag ctg		482	
Arg Glu Arg Asp Pro Asp Lys Ala Thr Arg Phe Arg Met Glu Glu Leu			
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aga ctg acc agc acc acg ttt gc ^g ctg acg gga gac tca gca cac aac		530	
Arg Leu Thr Ser Thr Phe Ala Leu Thr Gly Asp Ser Ala His Asn			
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caa gcc atg gtc cac tgg tct gg ^g cac aac agc agc gtg att ctc att		578	
Gln Ala Met Val His Trp Ser Gly His Asn Ser Ser Val Ile Leu Ile			
175	180	185	190
ttg aca aag ctc tat gac tat aac ctg ggg agc atc aca gag agc tc ^g		626	
Leu Thr Lys Leu Tyr Asp Tyr Asn Leu Gly Ser Ile Thr Glu Ser Ser			
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Leu Trp Arg Ser Thr Asp Tyr Gly Thr Thr Tyr Glu Lys Leu Asn Asp			
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aaa gtt ggt ttg aag acc att ttg gg ^g tat ctc tat gtg tgt cct acc		722	
Lys Val Gly Leu Lys Thr Ile Leu Gly Tyr Leu Tyr Val Cys Pro Thr			
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Asn Lys Arg Lys Ile Met Leu Leu Thr Asp Pro Glu Ile Glu Ser Ser			
240	245	250	
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Leu Leu Ile Ser Ser Asp Glu Gly Ala Thr Tyr Gln Lys Tyr Arg Leu			
255	260	265	270

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ggg aga aga tgg cag ctt atc caa gaa ggg gtt gta cca aac agg ttc Gly Arg Arg Trp Gln Leu Ile Gln Glu Gly Val Val Pro Asn Arg Phe 305	310	315	962
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ttt gcc caa atg aag ctt ccg aaa tat gct ttg ccc aag gac atg cat Phe Ala Gln Met Lys Leu Pro Lys Tyr Ala Leu Pro Lys Asp Met His 400	405	410	1250
gtt atc agc acc gat gag aat cag gtg ttc gca gc ^g gtc caa gaa tgg Val Ile Ser Thr Asp Glu Asn Gln Val Phe Ala Ala Val Gln Glu Trp 415	420	425	1298
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ttc ttg gct aac aag aag att gac aac caa gtg aag act ttc atc aca Phe Leu Ala Asn Lys Lys Ile Asp Asn Gln Val Lys Thr Phe Ile Thr 480	485	490	1490
tat aac aaa ggc aga gac tgg cgt ttg ctg cag gc ^g cc ^g gac acg gat Tyr Asn Lys Gly Arg Asp Trp Arg Leu Leu Gln Ala Pro Asp Thr Asp 495	500	505	1538
cta agg ggg gac ccc gtg cac tqc ttq ctq ccc tat tac tca cta cac			1586

Leu Arg Gly Asp Pro Val His Cys Leu Leu Pro Tyr Cys Ser Leu His			
515	520	525	
ctt cac ctg aag gtc tct gag aat ccc tac aca tca ggg atc att gcc			1634
Leu His Leu Lys Val Ser Glu Asn Pro Tyr Thr Ser Gly Ile Ile Ala			
530	535	540	
agc aaa gac aca gct cca agc atc ata gtg gca tca ggt aat ata ggt			1682
Ser Lys Asp Thr Ala Pro Ser Ile Ile Val Ala Ser Gly Asn Ile Gly			
545	550	555	
tct gaa ttg tca gac act gac atc agc atg ttt gtc tct tca gat gca			1730
Ser Glu Leu Ser Asp Thr Asp Ile Ser Met Phe Val Ser Ser Asp Ala			
560	565	570	
ggg aac acc tgg aga cag atc ttt gaa gaa gag cac agt gtt ttg tac			1778
Gly Asn Thr Trp Arg Gln Ile Phe Glu Glu His Ser Val Leu Tyr			
575	580	585	590
ctg gat caa ggt gga gtc ctg gtt gct atg aaa cac aca tct ctc cca			1826
Leu Asp Gln Gly Gly Val Leu Val Ala Met Lys His Thr Ser Leu Pro			
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Ile Arg His Leu Trp Leu Ser Phe Asp Glu Gly Arg Ser Trp Ser Lys			
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Tyr Ser Phe Thr Ser Ile Pro Leu Phe Val Asp Gly Val Leu Gly Glu			
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cct gga gaa gag act ctc atc atg aca gtg ttt gga cac ttc agc cac			1970
Pro Gly Glu Glu Thr Leu Ile Met Thr Val Phe Gly His Phe Ser His			
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cgc tct gaa tgg cag ctg gtc aaa gta gat tac aag tcc att ttt gat			2018
Arg Ser Glu Trp Gln Leu Val Lys Val Asp Tyr Lys Ser Ile Phe Asp			
655	660	665	670
aga cgg tgt gcc gaa gag gac tac aga cct tgg cag ctg cac agc cag			2066
Arg Arg Cys Ala Glu Glu Asp Tyr Arg Pro Trp Gln Leu His Ser Gln			
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Gly Glu Ala Cys Ile Met Gly Ala Lys Arg Ile Tyr Lys Lys Arg Lys			
690	695	700	
tca gag cgg aag tgt atgcaa gga aaa tat gca gga gct atg gaa tct			2162
Ser Glu Arg Lys Cys Met Gln Gly Lys Tyr Ala Gly Ala Met Glu Ser			
705	710	715	
gaa ccc tgt gtc tgc act gag gct gat ttt gat tgc gac tat ggt tat			2210
Glu Pro Cys Val Cys Thr Glu Ala Asp Phe Asp Cys Asp Tyr Gly Tyr			
720	725	730	
gag cga cac agc aat ggc cag tgc ctg ccg gca ttt tgg ttc aat cca			2258
Glu Arg His Ser Asn Gly Gln Cys Leu Pro Ala Phe Trp Phe Asn Pro			
735	740	745	750
tcc tct ctg tca aag gat tgc agc ttg gga cag agt tac ctc aat agt			2306
Ser Ser Leu Ser Lys Asp Cys Ser Leu Gly Gln Ser Tyr Leu Asn Ser			

755

760

765

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Lys Ser Leu Val Glu Ala Thr Gly Val Pro Gly Gln His Ile Leu Val			
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Ala Val Leu Pro Gly Leu Pro Thr Thr Ala Glu Leu Phe Val Leu Pro			
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Tyr Gln Asp Pro Ala Gly Glu Asn Lys Arg Ser Thr Asp Asp Leu Glu			
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Gln Ile Ser Glu Leu Leu Ile His Thr Leu Asn Gln Asn Ser Val His			
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Phe Glu Leu Lys Pro Gly Val Arg Val Leu Val His Ala Ala His Leu			
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aca gcg gcc ccc ctg gtg gac ctc act cca acc cac agt gga tct gcc		3314	
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Ile Tyr Lys Phe Lys Arg Arg Val Ala Leu Pro Ser Pro Pro Ser Pro			
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Ser Thr Gln Pro Gly Asp Ser Ser Leu Arg Leu Gln Arg Ala Arg His			
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Ser Ala Ser Thr Pro Arg Gly Phe Ser His Gln Gly Arg Pro Gly Arg
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Ala Pro Ala Thr Pro Leu Pro Leu Val Val Arg Pro Leu Phe Ser Val
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Ala Pro Gly Asp Arg Ala Leu Ser Leu Glu Arg Ala Arg Gly Thr Gly
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Ala Ser Met Ala Val Ala Ala Arg Ser Gly Arg Arg Arg Ser Gly
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Ala Asp Gln Glu Lys Ala Glu Arg Gly Glu Gly Ala Ser Arg Ser Pro
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Arg Gly Val Leu Arg Asp Gly Gly Gln Gln Glu Pro Gly Thr Arg Glu
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Arg Asp Pro Asp Lys Ala Thr Arg Phe Arg Met Glu Glu Leu Arg Leu
 145 150 155 160

Thr Ser Thr Thr Phe Ala Leu Thr Gly Asp Ser Ala His Asn Gln Ala
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Met Val His Trp Ser Gly His Asn Ser Ser Val Ile Leu Ile Leu Thr
 180 185 190

Lys Leu Tyr Asp Tyr Asn Leu Gly Ser Ile Thr Glu Ser Ser Leu Trp
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Arg Ser Thr Asp Tyr Gly Thr Thr Tyr Glu Lys Leu Asn Asp Lys Val
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Gly Leu Lys Thr Ile Leu Gly Tyr Leu Tyr Val Cys Pro Thr Asn Lys
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Arg Lys Ile Met Leu Leu Thr Asp Pro Glu Ile Glu Ser Ser Leu Leu
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Ile Ser Ser Asp Glu Gly Ala Thr Tyr Gln Lys Tyr Arg Leu Asn Phe
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Tyr Ile Gln Ser Leu Leu Phe His Pro Lys Gln Glu Asp Trp Ile Leu
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Cys Thr Glu Ala Asn Arg Asn Gln Pro Phe Pro Gly Tyr Ile Asp Pro
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 Gln Met Lys Leu Pro Lys Tyr Ala Leu Pro Lys Asp Met His Val Ile
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 Thr Leu Ala Leu Glu Asn Val Gln Ser Ser Arg Gly Pro Glu Gly Asn
 450 455 460

 Ile Met Ile Asp Leu Tyr Glu Val Ala Gly Ile Lys Gly Met Phe Leu
 465 470 475 480

 Ala Asn Lys Lys Ile Asp Asn Gln Val Lys Thr Phe Ile Thr Tyr Asn
 485 490 495

 Lys Gly Arg Asp Trp Arg Leu Leu Gln Ala Pro Asp Thr Asp Leu Arg
 500 505 510

 Gly Asp Pro Val His Cys Leu Leu Pro Tyr Cys Ser Leu His Leu His
 515 520 525

 Leu Lys Val Ser Glu Asn Pro Tyr Thr Ser Gly Ile Ile Ala Ser Lys
 530 535 540

 Asp Thr Ala Pro Ser Ile Ile Val Ala Ser Gly Asn Ile Gly Ser Glu
 545 550 555 560

 Leu Ser Asp Thr Asp Ile Ser Met Phe Val Ser Ser Asp Ala Gly Asn
 565 570 575

 Thr Trp Arg Gln Ile Phe Glu Glu His Ser Val Leu Tyr Leu Asp
 580 585 590

 Gln Gly Gly Val Leu Val Ala Met Lys His Thr Ser Leu Pro Ile Arg
 595 600 605

 His Leu Trp Leu Ser Phe Asp Glu Gly Arg Ser Trp Ser Lys Tyr Ser
 610 615 620

 Phe Thr Ser Ile Pro Leu Phe Val Asp Gly Val Leu Gly Glu Pro Gly
 625 630 635 640

 Glu Glu Thr Leu Ile Met Thr Val Phe Gly His Phe Ser His Arg Ser
 645 650 655

 Glu Trp Gln Leu Val Lys Val Asp Tyr Lys Ser Ile Phe Asp Arg Arg
 660 665 670

 Cys Ala Glu Glu Asp Tyr Arg Pro Trp Gln Leu His Ser Gln Gly Glu
 675 680 685

Ala Cys Ile Met Gly Ala Lys Arg Ile Tyr Lys Lys Arg Lys Ser Glu
 690 695 700
 Arg Lys Cys Met Gln Gly Lys Tyr Ala Gly Ala Met Glu Ser Glu Pro
 705 710 715 720
 Cys Val Cys Thr Glu Ala Asp Phe Asp Cys Asp Tyr Gly Tyr Glu Arg
 725 730 735
 His Ser Asn Gly Gln Cys Leu Pro Ala Phe Trp Phe Asn Pro Ser Ser
 740 745 750
 Leu Ser Lys Asp Cys Ser Leu Gly Gln Ser Tyr Leu Asn Ser Thr Gly
 755 760 765
 Tyr Arg Lys Val Val Ser Asn Asn Cys Thr Asp Gly Val Arg Glu Gln
 770 775 780
 Tyr Thr Ala Lys Pro Gln Lys Cys Pro Gly Lys Ala Pro Arg Gly Leu
 785 790 795 800
 Arg Ile Val Thr Ala Asp Gly Lys Leu Thr Ala Glu Gln Gly His Asn
 805 810 815
 Val Thr Leu Met Val Gln Leu Glu Glu Gly Asp Val Gln Arg Thr Leu
 820 825 830
 Ile Gln Val Asp Phe Gly Asp Gly Ile Ala Val Ser Tyr Val Asn Leu
 835 840 845
 Ser Ser Met Glu Asp Gly Ile Lys His Val Tyr Gln Asn Val Gly Ile
 850 855 860
 Phe Arg Val Thr Val Gln Val Asp Asn Ser Leu Gly Ser Asp Ser Ala
 865 870 875 880
 Val Leu Tyr Leu His Val Thr Cys Pro Leu Glu His Val His Leu Ser
 885 890 895
 Leu Pro Phe Val Thr Thr Lys Asn Lys Glu Val Asn Ala Thr Ala Val
 900 905 910
 Leu Trp Pro Ser Gln Val Gly Thr Leu Thr Tyr Val Trp Trp Tyr Gly
 915 920 925
 Asn Asn Thr Glu Pro Leu Ile Thr Leu Glu Gly Ser Ile Ser Phe Arg
 930 935 940
 Phe Thr Ser Glu Gly Met Asn Thr Ile Thr Val Gln Val Ser Ala Gly
 945 950 955 960
 Asn Ala Ile Leu Gln Asp Thr Lys Thr Ile Ala Val Tyr Glu Glu Phe
 965 970 975
 Arg Ser Leu Arg Leu Ser Phe Ser Pro Asn Leu Asp Asp Tyr Asn Pro
 980 985 990
 Asp Ile Pro Glu Trp Arg Arg Asp Ile Gly Arg Val Ile Lys Lys Ser
 995 1000 1005

Leu Val Glu Ala Thr Gly Val Pro Gly Gln His Ile Leu Val Ala Val
1010 1015 1020

Leu Pro Gly Leu Pro Thr Thr Ala Glu Leu Phe Val Leu Pro Tyr Gln
1025 1030 1035 1040

Asp Pro Ala Gly Glu Asn Lys Arg Ser Thr Asp Asp Leu Glu Gln Ile
1045 1050 1055

Ser Glu Leu Leu Ile His Thr Leu Asn Gln Asn Ser Val His Phe Glu
1060 1065 1070

Leu Lys Pro Gly Val Arg Val Leu Val His Ala Ala His Leu Thr Ala
1075 1080 1085

Ala Pro Leu Val Asp Leu Thr Pro Thr His Ser Gly Ser Ala Met Leu
1090 1095 1100

Met Leu Leu Ser Val Val Phe Val Gly Leu Ala Val Phe Val Ile Tyr
1105 1110 1115 1120

Lys Phe Lys Arg Arg Val Ala Leu Pro Ser Pro Pro Ser Pro Ser Thr
1125 1130 1135

Gln Pro Gly Asp Ser Ser Leu Arg Leu Gln Arg Ala Arg His Ala Thr
1140 1145 1150

Pro Pro Ser Thr Pro Lys Arg Gly Ser Ala Gly Ala Gln Tyr Ala Ile
1155 1160 1165